

TUNNEL SECTION IN SOILS AND
MIXED SOIL AND ROCK (cont'd):

It consists of very thin layers of clay, silt and fine sand and a few thicker layers of medium grained sand.

These strata are horizontal except at the base of the formation where they tend to conform to some of the less steep slopes of the surface on which they were deposited.

The clay layers are virtually impermeable and the fine silts nearly so, but the sand strata and particularly the coarser ones such as that shown in plate 8, conduct water quite freely.

The formation as a whole is impermeable in a vertical direction or normal to the stratification.

In this area the formation is protected by an effective organic mantle clearly shown in plate 8.

The formation will stand indefinitely in slopes ranging from 45° - 60° under the prevailing local climatic conditions as seen in the many steep, high road cuts. The luxuriance of the vegetation and the floral species represented indicate a moderately high rainfall. It is definitely not a "dry belt" flora.

If water even in small quantities gains access to the various strata through cracks or other openings more or less normal to the bedding, it will migrate along silt-sand layers and if any of these happen to be adjacent to clay beds these may develop very low angles of friction in places approaching zero, thus rendering the formation highly susceptible to slides. Should some of the cracks develop over a considerable vertical range they would permit the building up of appreciable pore pressures and thus intensify the danger of slides along clay-silt-sand contacts.

Many slides have been observed in similar formations moving along such planes with slopes as low as 3 or 4 degrees.

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